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Title:

CORMAS, a participatory and interdisciplinary Agent Based Simulation Platform

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Abstract:

Cormas (for Common Pool Resources and Multi-Agent Systems) is an Agent-Based Modeling (ABM) platform dedicated to natural and common-pool resources management. As an open-source software, it is used by an international community of researchers willing to understand the relationships between societies and their environment. Cormas is intended to facilitate the design of ABM as well as the monitoring and analysis of agent-based simulation scenarios.

From recent years, the development of Cormas has taken an innovative direction more oriented towards participatory modeling, i.e. the collective design of models as an appropriate medium for fostering interdisciplinarity, and interactive simulation involving several stakeholders who interact with a simulation by acting directly on their agents.

As our intention is to involve more deeply various types of stakeholders (from farmers to scientists and from technicians to decision makers) into the modeling process, it is necessary to have an easily changeable tool to act on the simulation and to modify the conceptual model on the fly.

Cormas benefits from all the functionalities offered by Smalltalk, which opens a space of potentialities much richer than the other ABM platforms on the market do. Its minimalist syntax enables fast language learning even for non-computer specialists. As an immersive OO system, that enables concept reification, introspection and intercession, Smalltalk promotes rapid and efficient model prototyping. The power of its debugger allows a novice modeler to check finely the functioning of his model, but also to code directly during the execution of a simulation.

Thus, participatory design of models and interactive simulations enable to collectively explore medium and long-term scenarios to better understand how a desired situation may be reached on the field.